

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
28 August 2003 (28.08.2003)

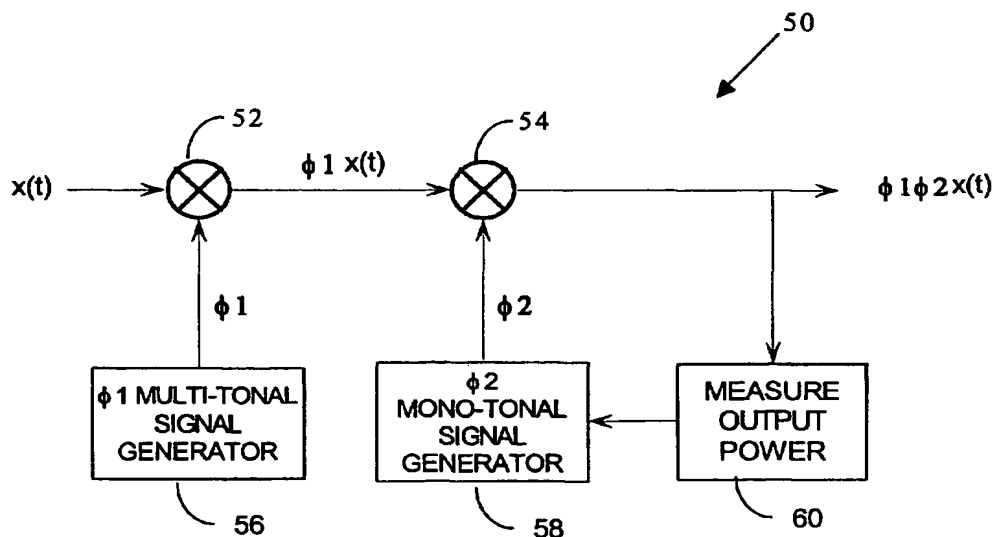
PCT

(10) International Publication Number
WO 03/071673 A2

- (51) International Patent Classification⁷: **H03D** (74) Agents: **LEDWELL, Kent, M.** et al.; Gowling Lafleur Henderson LLP, 160 Elgin Street, Suite 2600, Ottawa, Ontario K1P 1C3 (CA).
- (21) International Application Number: PCT/CA03/00257
- (22) International Filing Date: 25 February 2003 (25.02.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/360,073 25 February 2002 (25.02.2002) US
- (71) Applicant (for all designated States except US): **SIRIFIC WIRELESS CORPORATION** [CA/CA]; 460 Philip Street, Suite 300, Waterloo, Ontario N2J 5J2 (CA).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **MANKU, Tajinder** [CA/CA]; 263 Lion's Court, Waterloo, Ontario N2L 6M7 (CA).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DOWN CONVERSION METHODOLOGY AND TOPOLOGY WHICH COMPENSATES FOR SPURIOUS RESPONSE



(57) **Abstract:** There is a need for an inexpensive, high-performance, fully-integrable, multistandard transceiver, which suppresses spurious noise signals. The invention provides a topology that satisfies this need, providing a first mixer for receiving an input signal $x(t)$, and mixing it with a multi-tonal mixing signal $\phi 1$ to generate an output signal $\phi 1 x(t)$, and providing a second mixer for receiving the $\phi 1 x(t)$ signal, and mixing it with a mono-tonal mixing signal $\phi 2$, to generate an output signal $\phi 1 \phi 2 x(t)$. The two mixing signals emulate an LO signal because $\phi 1 * \phi 2$ has significant power at the frequency of the LO signal being emulated. The topology also includes a power measurement circuit for measuring the power of the output signal $\phi 1 \phi 2 x(t)$. This power output signal is used to vary the characteristics of the mono-tonal mixing signal $\phi 2$ to reduce the power level of said output signal.